AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-66 (Cancelled)

67. (New) A machine-readable data structure stored on a machine-readable medium, the data structure comprising:

appearance data that indicates an appearance for each of a plurality of nodes associated with a portion of a surface of an object;

displacement data that indicates displacement distances for the nodes from corresponding reference nodes; and

local coordinate system data that indicates a local coordinate system for the plurality of nodes.

68. (New) The machine-readable data structure of claim 67, wherein the displacement data indicates displacement distances for the nodes from a plurality of regularly spaced reference nodes that are arranged in a grid.

69. (New) The machine-readable data structure of claim 67, wherein the displacement data indicates displacement distances for the nodes from a plurality of regularly spaced reference nodes that are in a base plane in the local coordinate system.

70. (New) The machine-readable data structure of claim 67:

wherein the coordinate system data indicates a base plane; and

wherein the displacement data indicates displacement distances from corresponding reference nodes in the base plane.

71. (New) The machine-readable data structure of claim 67, wherein the local coordinate system data comprises coordinates for the reference nodes, and wherein the reference nodes are regularly spaced and are arranged in a grid.

72. (New) The machine-readable data structure of claim 67, wherein the local coordinate system data comprises data sufficient to indicate an origin, a first axis, a second axis, and a length associated with the first axis.

73. (New) The machine-readable data structure of claim 67, wherein the data structure comprises appearance data and displacement data for a multiple of 2^k+1 nodes, where k is a positive integer.

74. (New) The machine-readable data structure of claim 67, wherein the displacement data indicates independent displacement distances for the nodes.

75. (New) A method comprising performing one or more rendering calculations using the data of the machine-readable data structure of claim 67.

76. (New) A method comprising sending the machine-readable data structure of claim 67 over the Internet.

77. (New) A method comprising:

accessing graphical data for a plurality of nodes that represent at least a portion of a surface of a three-dimensional object, the graphical data including:

appearance data that indicates an appearance for each of the plurality of nodes;

displacement data that indicates displacement distances for the nodes from corresponding reference nodes; and

local coordinate system data that indicates a local coordinate system for the plurality of nodes; and

performing one or more rendering calculations using the data; and

presenting results of the one or more rendering calculations on a presentation device.

78. (New) The method of claim 77, wherein said accessing comprises accessing graphical data including displacement data that indicates displacement distances for the nodes from a plurality of regularly spaced nodes arranged in a grid.

79. (New) The method of claim 77:

wherein said accessing the local coordinate system data includes accessing data sufficient to define a base plane; and

wherein said performing the one or more rendering calculations includes determining displaced nodes by combining displacement distances with corresponding reference nodes in the base plane.

80. (New) The method of claim 77, wherein accessing includes accessing graphical data for a multiple of 2^k+1 nodes, where k is a positive integer.

81. (New) The method of claim 77, wherein said performing the one or more rendering calculations comprises:

determining four pixels of a quadrilateral that correspond to four nodes of the plurality of nodes, the quadrilateral having a quadrilateral dimension;

determining an inner pixel contained within the quadrilateral by comparing the quadrilateral dimension with a pixel dimension; and

determining a value for the inner pixel by using values for at least one of the four pixels.

82. (New) The method of claim 77, wherein said performing the one or more rendering calculations comprises removing a node of the plurality if the node lies outside of a view volume by clipping.

83. (New) The method of claim 77, wherein said performing the one or more rendering calculations comprises modifying a color value based on lighting calculations, the lighting calculations including calculating a normal vector by forming a vector product of tangents associated with neighboring nodes.

84. (New) The method of claim 77, wherein said accessing the graphical data comprises accessing displacement data that indicates independent displacement distances for the nodes.

85. (New) A machine-readable medium having stored thereon data representing sequences of instructions that when executed cause a machine to:

access graphical data for a plurality of nodes that represent at least a portion of a surface of a three-dimensional object, the graphical data including:

appearance data that indicates an appearance for each of the plurality of nodes;

displacement data that indicates displacement distances for the nodes from corresponding reference nodes; and

local coordinate system data that indicates a local coordinate system for the plurality of nodes; and

performing one or more rendering calculations using the data.

86. (New) The machine-readable medium of claim 85:

wherein the instructions to access the local coordinate system data include instructions that when executed cause the machine to access data sufficient to define a base plane and a plurality of regularly spaced reference nodes that are arranged in a grid; and

wherein the instructions to perform the one or more rendering calculations include instructions that when executed cause the machine to determine displaced nodes by combining displacement distances with the corresponding regularly spaced reference nodes.

87. (New) An apparatus comprising:

a graphics adapter;

a rendering unit of the graphics adapter;

logic of the rendering unit to render graphical data including:

appearance data that indicates an appearance for each of a plurality of nodes associated with a portion of a surface of an object;

displacement data that indicates displacement distances for the nodes from corresponding reference nodes; and

local coordinate system data that indicates a local coordinate system for the plurality of nodes.

88. (New) The apparatus of claim 87, wherein the rendering unit comprises logic to determine displaced nodes by combining indicated displacement distances with a plurality of reference nodes indicated in the graphical data which are regularly spaced and arranged in a grid.

89. (New) The apparatus of claim 87:

wherein the coordinate system data indicates a base plane; and

wherein the displacement data indicates displacement distances from corresponding reference nodes in the base plane.

90. (New) The apparatus of claim 87, wherein the local coordinate system data comprises data sufficient to indicate an origin, a first axis, a second axis, and a length associated with the first axis.

91. (New) The apparatus of claim 87, wherein the rendering unit resides on an expansion board of the graphics adapter.

92. (New) The apparatus of claim 91, wherein the expansion board comprises a memory.

93. (New) A method comprising plugging the apparatus of claim 87 into a computer system including a communication device.

94. (New) A system comprising:

a bus;

a memory coupled with the bus;

a processor coupled with the bus;

a communication device coupled with the bus; and

a rendering unit having logic to render a graphical data that includes:

appearance data that indicates an appearance for each of a plurality of nodes associated with a portion of a surface of an object;

displacement data that indicates displacement distances for the nodes from corresponding reference nodes; and

local coordinate system data that indicates a local coordinate system for the plurality of nodes.

95. (New) The system of claim 94, wherein the rendering unit comprises logic to determine displaced nodes by combining indicated displacement distances with a plurality of reference nodes indicated in the graphical data which are regularly spaced and arranged in a grid.

96. (New) The system of claim 94, wherein the local coordinate system data comprises data sufficient to indicate an origin, a first axis, a second axis, and a length associated with the first axis.

97. (New) The system of claim 94, further comprising a second rendering unit coupled with the bus to render a spatial patch in parallel with the rendering of said data structure.

98. (New) The system of claim 94, wherein the rendering unit resides on an expansion board that is plugged into the system.

99. (New) The system of claim 94, wherein the rendering unit resides on a motherboard of the system.